

What is claimed is:

1. A protein having the amino acid sequence composed of 231 amino acids represented by the 1st to 231st amino acids of SEQ ID NO: 2; or a protein having an amino acid sequence derived from the amino acid sequence represented by the 1st to 231st amino acids of SEQ ID NO: 2 by deletion, substitution or addition of one to several amino acids and having the same property as that of the protein having the amino acid sequence represented by the 1st to 231st amino acids of SEQ ID NO: 2; or a modified derivative thereof.

2. A nucleotide sequence represented by the 110th to 802nd bases of SEQ ID NO: 1; a nucleotide sequence encoding the amino acid sequence represented by the 1st to 231st amino acids of SEQ ID NO: 2; or a nucleotide sequence hybridizable with a nucleotide sequence which is complementary to the above nucleotide sequence under stringent conditions and encoding a protein having the same property as that of the protein having the amino acid sequence represented by the 1st to 231st amino acids of SEQ ID NO: 2.

3. A protein having the amino acid sequence composed of 231 amino acids represented by the 1st to 231st amino acids of SEQ ID NO: 4; or a protein having an amino acid sequence derived from the amino acid sequence

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represented by the 1st to 231st amino acids of SEQ ID NO: 4 by deletion, substitution or addition of one to several amino acids and having the same property as that of the protein having the amino acid sequence represented by the 5 1st to 231st amino acids of SEQ ID NO: 4; or a modified derivative thereof.

4. A nucleotide sequence represented by the 132nd to 824th bases of SEQ ID NO: 3; a nucleotide sequence encoding the amino acid sequence represented by SEQ ID NO: 10 4; or a nucleotide sequence hybridizable with a nucleotide sequence which is complementary to the above nucleotide sequence under stringent conditions and encoding a protein having the same property as that of the protein having the amino acid sequence represented by the 1st to 231st amino 15 acids of SEQ ID NO: 4.

5. A protein having the amino acid sequence composed of 33 amino acids represented by the -33rd to -1st amino acids of SEQ ID NO: 4; or a protein having an amino acid sequence derived from the amino acid sequence 20 represented by the -33rd to -1st amino acids of SEQ ID NO: 4 by deletion, substitution or addition of one to several amino acids and having the same property as that of the protein having the amino acid sequence represented by the - 33rd to -1st amino acids of SEQ ID NO: 4; or a modified 25 derivative or fragment thereof.

DRAFT--05/22/2020

6. A nucleotide sequence represented by the  
33rd to 131st bases of SEQ ID NO: 3; a nucleotide sequence  
encoding the amino acid sequence represented by the -33rd  
to -1st amino acids of SEQ ID NO: 4; or a nucleotide  
5 sequence hybridizable with a nucleotide sequence which is  
complementary to the above nucleotide sequence under  
stringent conditions and encoding a protein having the same  
property as that of the protein having the amino acid  
sequence represented by the -33rd to -1st amino acids of  
10 SEQ ID NO: 4; or a fragment thereof.

7. A protein having the amino acid sequence of  
264 amino acids represented by the -33rd to 231st amino  
acids of SEQ ID NO: 4; or a protein having an amino acid  
sequence derived from the amino acid sequence represented  
15 by the -33rd to 231st amino acids of SEQ ID NO: 4 by  
deletion, substitution or addition of one to several amino  
acids and having the same property as that of the protein  
having the amino acid sequence represented by the -33rd to  
231st amino acids of SEQ ID NO: 4; or a modified derivative  
20 thereof.

8. A nucleotide sequence represented by the  
33rd to 824th bases of SEQ ID NO: 3; a nucleotide sequence  
encoding the amino acid sequence represented by the -33rd  
to 231st amino acids of SEQ ID NO: 4; or a nucleotide  
25 sequence hybridizable with a nucleotide sequence which is

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complementary to the above nucleotide sequence under stringent conditions and encoding a protein having the same property as that of the protein having the amino acid sequence represented by the -33rd to 231st amino acids of  
5 SEQ ID NO: 4.

9. A nucleotide sequence represented by SEQ ID NO: 1; or a nucleotide sequence hybridizable with a nucleotide sequence which is complementary to the above nucleotide sequence under stringent conditions and encoding  
10 a protein having the same property as that of the protein encoded by the nucleotide sequence represented by SEQ ID NO: 1.

10. A nucleotide sequence represented by SEQ ID NO: 3; or a nucleotide sequence hybridizable with a nucleotide sequence which is complementary to the above nucleotide sequence under stringent conditions and encoding a protein having the same property as that of the protein encoded by the nucleotide sequence represented by SEQ ID NO: 3.

20 Sub O<sup>2</sup> 11. A vector comprising the nucleotide sequence according to any one of claims 2, 4, 6 and 8-10.

12. Transformed cells having the nucleotide sequence according to any one of claims 2, 4, 6 and 8-10 in an expressible state.

25 13. A process for producing a protein which

comprises culturing cells transformed with the nucleotide sequence according to either of claims 2 and 9, and collecting hBSSP5 produced.

14. A process for producing a protein which  
5 comprises culturing cells transformed with the nucleotide sequence according to any one of claims 4, 6, 8 and 10, and collecting mBSSP5 produced.

15. The process according to claim 13 or 14,  
10 wherein the cells are *E. coli* cells, animal cells or insect cells.

16. A non-human transgenic animal whose expression level of BSSP5 gene has been altered.

17. The non-human transgenic animal according to claim 16, wherein BSSP5 gene is cDNA, genomic DNA or  
15 synthetic DNA encoding BSSP5.

18. The non-human transgenic animal according to claim 16, wherein the expression level has been altered by mutating a gene expression regulatory site.

19. A knockout mouse whose mBSSP5 gene function  
20 is deficient.

Sub D<sup>3</sup> 20. An antibody against the protein according to  
any one of claims 1, 3, 5 and 7 or a fragment thereof.

21. The antibody according to claim 20 which is  
a polyclonal antibody, a monoclonal antibody or a peptide  
25 antibody.

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sub O 22. A process for producing a monoclonal antibody against the protein according to any one of claims 1, 3, 5 and 7 or a fragment thereof which comprises administering the protein according to any one of claims 1, 5 3, 5 and 7 or a fragment thereof to a warm-blooded animal other than a human being, selecting the animal whose antibody titer is recognized, collecting its spleen or lymph node, fusing the antibody producing cells contained therein with myeloma cells to prepare a monoclonal antibody producing hybridoma.

10 23. A method for determining the protein according to any one of claims 1, 3, 5 and 7 or a fragment thereof in a specimen which is based on immunological binding of an antibody against the protein or a fragment 15 thereof to the protein or a fragment thereof.

20 24. A method for determining hBSSP5 or a fragment thereof in a specimen which comprises reacting a monoclonal antibody or a polyclonal antibody against the protein according to claim 1 or a fragment thereof and a labeled antibody with hBSSP5 or a fragment thereof in the specimen to detect a sandwich complex produced.

25 25. A method for determining hBSSP5 or a fragment thereof in a specimen which comprises reacting a monoclonal antibody or a polyclonal antibody against the protein according to claim 1 or a fragment thereof with

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labeled hBSSP5 and hBSSP5 or a fragment thereof in the specimen competitively to detect an amount of hBSSP5 or a fragment thereof in the specimen based on an amount of the labeled hBSSP5 reacted with the antibody.

5           26. The method according to any one of claims 23-25, wherein the specimen is a body fluid.

27. A diagnostic marker for diseases in tissues comprising the protein according to any one of claims 1, 3, 5 and 7.

10          28. The marker according to claim 27 to be used for diagnosis of Alzheimer's disease or epilepsy in brain.

29. The marker according to claim 27 to be used for diagnosis of cancer or inflammation of brain, prostate, placenta, testicle, spleen or pancreas.

15          30. The marker according to claim 27 to be used for diagnosis of sterility in semen or sperms

31. The marker according to claim 27 to be used for diagnosis of prostatic hypertrophy in prostate.

Sub D<sup>4</sup> 32. A method for detecting pancreatitis which comprises measuring concentration of the protein according to any one of claims 1, 3, 5 and 7 in blood or urine.

33. A pharmaceutical composition for detecting pancreatitis which comprises the antibody according to claim 20 or 21.

25          34. Use of the protein according to any one of

claims 1, 3, 5 and 7 for preparing an antibody for detecting pancreatitis.

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